

CLAIMS

What is claimed is:

1. A method for maintaining a quantity of a magneto-rheological substance in a substantially static position in conjunction with any mechanism, said method comprising the steps of:

providing at least one porous metal component having a porosity sufficient to receive said magneto-rheological substance within a plurality of said pores;

impregnating said at least one porous metal component with said magneto-rheological substance; and

resisting the movement of said magneto-rheological substance relative to said component due to outside forces acting on said magneto-rheological substance by applying a constant minimal modulating charge to said magneto-rheological substance and said at least one porous metal component.

2. The method of claim 1, wherein said mechanism consists of at least two rotating components.

3. The method of claim 1, wherein said step of impregnating said at least one porous metal component with said magneto-rheological substance consists of removing air from the pores of said at least one porous metal component and replacing the air with said magneto-rheological substance.

4. A method for accelerating the binding properties of an electro-rheological substance in any mechanism, said method comprising the steps of:

providing at least two porous metal components each having a porosity sufficient to receive said electro-rheological substance within a plurality of said pores;

impregnating said at least two porous metal components with said electro-rheological substance;

applying a constant minimal modulating charge to said electro-rheological substance and said at least two porous metal components; and

increasing said charge applied to said electro-rheological substance such that the binding characteristics of said electro-rheological substance are activated.

5. The method of claim 4, wherein said constant minimal modulating charge is not great enough to activate the binding characteristics of said electro-rheological substance.

6. The method of claim 5, wherein said mechanism consists of at least two rotating components.

7. The method of claim 4, wherein said step of impregnating said at least two porous metal components with said electro-rheological substance consists of removing air from the pores of said at least two porous metal components and replacing said air with said electro-rheological substance.

8. A method for maintaining a homogenous film layer of a magneto-rheological substance between the components of a mechanism, said method comprising the steps of:

providing at least two porous metal components each having a porosity sufficient to receive said magneto-rheological substance within a plurality of said pores;

impregnating said at least two porous metal components with said
magneto-rheological substance;

introducing a quantity of said magneto-rheological substance between
said at least two porous components of said mechanism; and

5 applying a constant minimal modulating charge to said magneto-
rheological substance and said at least two porous metal components.

9. The method of claim 8, wherein said mechanism consists of at
least two rotating components.

10. The method of claim 8, wherein said step of impregnating said
at least two porous metal components with said magneto-rheological
substance consists of removing air from the pores of said at least two porous
metal components and replacing said air with said magneto-rheological
substance.

11. A method for accelerating the binding properties of a magneto-
rheological substance in any mechanism, said method comprising the steps
of:

providing at least two porous metal components each having a porosity
sufficient to receive said magneto-rheological substance within a plurality of
said pores;

20 impregnating said at least two porous metal components with said
magneto-rheological substance;

applying a constant minimal modulating charge to said magneto-
rheological substance and said at least two porous metal components; and

25 applying a magnetic field to said magneto-rheological substance such
that the binding characteristics of said magneto-rheological substance are
activated.

12. The method of claim 11, wherein said mechanism consists of at least two rotating components.

13. The method of claim 11, wherein said step of impregnating said at least two porous metal components with said magneto-rheological substance consists of removing air from the pores of said at least two porous metal components and replacing said air with said magneto-rheological substance.

14. A method for maintaining a quantity of an electro-rheological substance in a substantially static position in conjunction with any mechanism, said method comprising the steps of:

providing at least one porous metal component having a porosity sufficient to receive said electro-rheological substance within a plurality of said pores;

impregnating said at least one porous metal component with said electro-rheological substance; and

resisting the movement of said electro-rheological substance relative to said component due to outside forces acting on said electro-rheological substance by applying a constant minimal modulating charge to said electro-rheological substance and said at least one porous metal component.

15. The method of claim 14, wherein said mechanism consists of at least two rotating components.

16. The method of claim 14, wherein said step of impregnating said at least one porous metal component with said electro-rheological substance consists of removing air from the pores of said at least one porous metal component and replacing said air with said electro-rheological substance.

17. The method of claim 14, wherein said constant minimal modulating charge is not great enough to activate the binding characteristics of said electro-rheological substance.

18. A method for maintaining a homogenous film layer of an electro-rheological substance between the components of a mechanism, said method comprising the steps of:

providing at least two porous metal components each having a porosity sufficient to receive said electro-rheological substance within a plurality of said pores;

impregnating said at least two porous metal components with said electro-rheological substance;

introducing a quantity of said electro-rheological substance between said at least two porous components of said mechanism; and

applying a constant minimal modulating charge to said electro-rheological substance and said at least two porous metal components.

19. The method of claim 18, wherein said mechanism consists of at least two rotating components.

20. The method of claim 18, wherein said step of impregnating said at least two porous metal components with said electro-rheological substance consists of removing air from the pores of said at least two porous metal components and replacing said air with said electro-rheological substance.

21. The method of claim 18, wherein said constant minimal modulating charge is not great enough to activate the binding characteristics of said electro-rheological substance.